WHAT IS CLAIMED IS:

1. A printed circuit board (PCB) substrate, comprising:

a first dielectric material associated with a first current return layer;

a second dielectric material associated with a second current return layer;

a signal path layer interposed between said first dielectric material and said second dielectric material; and

an adhesive layer interposed between said first dielectric material and said second dielectric material, said adhesive layer being substantially coplanar relative to said signal path layer.

2. The PCB substrate as recited in claim 1, wherein said adhesive layer is comprised of a material operable to substantially reduce attenuation due to an electrical coupling effect between a pair of signal traces disposed in said signal path layer.

3. The PCB substrate as recited in claim 2, wherein said adhesive layer has a lower loss tangent than said first dielectric material.

4. The PCB substrate as recited in claim 2, wherein said adhesive layer has a higher glass transition point (T_g) than said first dielectric material.

5. The PCB substrate as recited in claim 2, wherein said adhesive layer comprises a dielectric material selected from the group consisting of a two-sided adhesive tape, an adhesive film having a copper foil, an epoxy adhesive sheet, and an expanded polytetrafluoroethylene (ePTFE).

6. The PCB substrate as recited in claim 2, wherein said pair of signal traces are electrically coupled in a differential mode.

7. The PCB substrate as recited in claim 6, wherein said signal path layer further comprises at least one pair of signal traces electrically coupled in a common mode.

8. The PCB substrate as recited in claim 2, wherein said first dielectric material comprises a material selected from the group consisting of FR-4 material, pre-preg material, core material, and B-stage substrate material.

9. A printed circuit board (PCB) substrate, comprising:

a first dielectric material associated with a first current return layer;

a first signal path layer embedded in said first dielectric material;

a second dielectric material associated with a second current return layer;

a second signal path layer embedded in said second dielectric material, said second signal path layer being substantially parallel to said first signal path layer in a stack-up arrangement; and

an adhesive layer interposed between said first dielectric material and said second dielectric material.

10. The PCB substrate as recited in claim 9, wherein said adhesive layer is comprised of a material operable to substantially reduce attenuation due to an electrical coupling effect between a first signal trace disposed in said first signal path layer and a second signal trace disposed in said second signal path layer.

11. The PCB substrate as recited in claim 10, wherein said adhesive layer has a lower loss tangent than said first dielectric material.

12. The PCB substrate as recited in claim 10, wherein said adhesive layer has a higher glass transition point (T_g) than said first dielectric material.

13. The PCB substrate as recited in claim 10, wherein said adhesive layer comprises a dielectric material selected from the group consisting of a two-sided adhesive tape, an adhesive film having a copper foil, an epoxy adhesive sheet, and an expanded polytetrafluoroethylene (ePTFE).

14. The PCB substrate as recited in claim 10, wherein said first and second signal traces are electrically coupled in a differential mode.

15. The PCB substrate as recited in claim 10, wherein said first dielectric material comprises a material selected from the group consisting of FR-4 material, pre-preg material, core material, and B-stage substrate material.

16. A method for constructing a printed circuit board (PCB) substrate, comprising:

providing a first dielectric material associated with a first current return layer;

providing a second dielectric material associated with a second current return layer;

providing a signal path layer interposed between said first dielectric material and said second dielectric material; and

providing an adhesive layer interposed between said first dielectric material and said second dielectric material, said adhesive layer being substantially coplanar relative to said signal path layer.

17. The method as recited in claim 16, further comprising selecting said adhesive layer to include a material operating to substantially reduce attenuation due to an electrical coupling effect between a pair of signal traces disposed in said signal path layer.

18. The method as recited in claim 17, further comprising selecting said adhesive layer to include a material having a lower loss tangent than said first dielectric material.

19. The method as recited in claim 17, further comprising selecting said adhesive layer to include a material having a higher glass transition point (T_g) than said first dielectric material.

20. The method as recited in claim 17, further comprising curing a layer of said PCB substrate, said layer selected from the group consisting of said first dielectric material, said second dielectric material, and said adhesive layer.

21. A method for constructing a printed circuit board (PCB) substrate, comprising:

providing a first dielectric material associated with a first current return layer;

providing a first signal path layer embedded in said first dielectric material;

providing a second dielectric material associated with a second current return layer;

providing a second signal path layer embedded in said second dielectric material, said second signal path layer being substantially parallel to said first signal layer in a stack-up arrangement; and

providing an adhesive layer interposed between said first dielectric material and said second dielectric material.

22. The method as recited in claim 21, further comprising selecting said adhesive layer to include a material operable to substantially reduce attenuation due to an electrical coupling effect between a first signal trace disposed in said first signal path layer and a second signal trace disposed in said second signal path layer.

23. The method as recited in claim 22, further comprising selecting said adhesive layer to include a material having a lower loss tangent than said first dielectric material.

24. The method as recited in claim 22, further comprising selecting said adhesive layer to include a material having a higher glass transition point (T_g) than said first dielectric material.

25. The method as recited in claim 22, further comprising curing a layer of said PCB substrate, said layer selected from the group consisting of said first dielectric material, said second dielectric material, and said adhesive layer.